

Acc. Nr:

AP0049842

Abstracting Service:  
CHEMICAL ABST. 5-7C

Ref. Code:

UR 0080

101339j Porous structure of nonactivated carbon adsorbents from industrial types of phenol-formaldehyde resins. Plache-  
nov, T. G.; Seyranov, L. B.; Pulerevich, M. Ya.; Karel'skaya, V.  
E. (Leningrad. Tekhnol. Inst. im. Lensovet, Leningrad, USSR).  
Zh. Prikl. Khim. (Leningrad) 1970, 43(1), 97-101 (Russ.). Car-  
bonization of a resol-type phenol-HCHO resin and a phenol-  
PhNH<sub>2</sub>-HCHO resin at 400-1000° under N gave C adsorbents  
having extremely low pore vols. and radii in the range 2.9-280,000  
Å. The adsorbents allowed C<sub>6</sub>H<sub>6</sub> mols. to pass, but not MeOH  
mols. A considerable expansion of the pore structure in the range  
of 2.9-280,000 Å was obsd. when the PhOH-HCHO mole ratio was  
reduced to 0.85 : 1.

CKJR J nr

REEL/FRAME  
19801767

7

USSR

UDC 621.396.677:523.164

ZAYTSEV, A. P., ZOTOV, V. V., and SEVRYUKOV, B. N.

"One Extremal Problem of Radiotelescope Control"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute), 1972, vyp.116, pp 148-154 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B21)

Translation: The authors study the particularities of systems for the control of radio telescopes. Problems are also studied which are related to the development of radio telescopes in conjunction with large antennas with a single, fixed emitter where the antennas form a single-beam radiation pattern. An algorithm is set up for optimizing the system of control. Original article: three illustrations and seven bibliographic entries. N.S.

1/2 009 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--DETERMINATION OF GERMANIUM IN HARD COALS -U-  
AUTHOR--(02)-SEVRYUKOV, N.N., SALIKOVA, G.E.  
COUNTRY OF INFO--USSR  
SOURCE--ZAVOD. LAB. 1970, 36(1) 25-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--COAL, GERMANIUM, CHEMICAL ANALYSIS/(U)IPI20 ION EXCHANGE  
RESIN, (U)AN2F ION EXCHANGE RESIN  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1983/1521 STEP NO--UR/0032/70/036/001/0025/0027  
CIRC ACCESSION NO--AP0054372  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054372

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TIME AND TEMP. REQUIRED FOR CONVERSION OF GE IN COAL TO H SUB2 O SOL. NA SUB2 GES SUB3 BY FUSION WITH NA SUB2 SO SUB4 WERE DETD. TO DET. GE IN COAL, FUSE A MIXT. OF 2.0 G COAL AND 3 G ANHYD. NA SUB2 SO SUB4 1 HR AT 900DEGREES, LEACH WITH 15-20 ML H SUB2 O, FILTER THE SOLN. AND DIL. THE FILTRATE TO 100 ML. ADD 2 ML 30PERCENT H SUB2 O SUB2, BOIL THE SOLN. TO OXIDIZE THE FE, AND EVAP. THE SOLN. TO 10 ML, ADD 2-3 DROPS CONCD. HCL, COOL, AND PASS IT THROUGH A COLUMN CONTG. A MIXT. OF ION EXCHANGE RESINS AMBERLITE IP-120 (H FORM) 7 PARTS AND AN-2F (CL FORM) 3 PARTS. ADD 2 ML 12N HCL AND 1 ML 1PERCENT GELATIN AND THEN 1.5 ML OF A SOLN. OF 50 MG PHENYLFLUORONE IN 100 ML 96PERCENT ETOH AND 0.5 ML 6N HCL. DIL. THE SOLN. TO 25 ML AND, AFTER 30 MIN, DET. ITS ABSORBANCE WITH A GREEN FILTER.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--GERMANIUM DISULFIDE SODIUM MONOSULFIDE WATER SYSTEM AT 25DEGREES  
-U-  
AUTHOR-(02)-SEVRYUKOV, N.N., SALIKOVA, G.E.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1634-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PHASE EQUILIBRIUM, TERNARY LIQUID SYSTEM, AQUEOUS SOLUTION,  
CRYSTALLIZATION, SOLUBILITY, GERMANIUM SULFIDE, SODIUM SULFIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3006/1401 STEP NO--UR/0078/70/015/006/1634/1639  
CIRC ACCESSION NO--AP0135075  
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135075

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. OF GES SUB2 IN AQ.  
SOLNS. OF NA SUB2 S WAS DETD. AND THE ISOTHERMAL (25DEGREES) SOLY.  
DIAGRAM OF THE NA SUB2 S, GES SUB2, H SUB2 D IS CONSTRUCTED. THE SHSTEM  
FORMS CONGRUENTLY SOL. CRYST. NA SUB2 S.9H SUB2 O, NA SUB4 GES SUB4.15H  
SUB2 O, NA SUB2 GES SUB3.10H SUB2 O, NA SUB2 GE SUB2 S SUB5.11H SUB2 O,  
AND GES SUB2. THE COMPN. OF LIQ. IN THE SOLID PHASES OF THE SYSTEM AT  
25DEGREES IS TABULATED.

UNCLASSIFIED

1/2 010  
TITLE--ON THE POLAROGRAPHIC ANALYSIS OF SOME MIXTURES OF THE RARE EARTH  
ELEMENTS -U-  
AUTHOR--(03)-SEVRYUKOV, N.N., DOROFYEVA, G.I., DESILVA, L.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ANAL. KHIM.: 25: 695-9 (APR 1970)  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--POLAROGRAPHIC ANALYSIS, RARE EARTH METAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3001/0455  
CIRC ACCESSION NO--AP0126207  
STEP NO--UR/0075/70/025/000/0695/0699  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126207

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDIES WERE MADE ON THE POSSIBILITY OF THE INDIRECT POLAROGRAPHIC DETERMINATION OF INDIVIDUAL RARE EARTHS AND THEIR TOTAL CONTENT USING MANGANESE WHICH IS DISPLACED BY THEM FROM MN EDTA PRIME2 NEGATIVE. THE HEAVY RARE EARTH ELEMENTS CAN BE DETERMINED IN THE PRESENCE OF LANTHANUM AND OTHER LIGHT RARE EARTHS BY MEANS OF THE COMPLEXES OF OTHER READILY POLAROGRAPHED METALS WITH EDTA. FACILITY: PATRICE LUMUMBA UNIV. OF PEOPLE'S FRIENDSHIP, MOSCOW.

UNCLASSIFIED



SEYDAMETOV, M. A.

EFFECT OF NARCOTICS ON ANIMAL BODY REACTIVITY DURING  
HYPERINEMIA

Article by L. Ya. Kolesnaya and M. A. Seydametov, Moscow, Akademiya Voprosy Kosmicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Moscow, 1971, pp 126-127.

It has been demonstrated that body reactivity to drug action, noise, hypoxia and radiation changes considerably (V. V. Parin, et al., 1964; V. Ya. Belay, et al., 1964, 1967; L. V. Pastushonkov, 1967; I. S. Gurin, et al., 1966).

We felt it desirable to investigate the influence of drugs on body reactivity in animals during hypoxia of different durations.

In the experiments we studied the classical narcotic which have a predominant effect on different parts of the central nervous system (hexanal, chloral hydrate and urethane).

The experiments were made on 1,13 white male rats weighing 150-200 g. The experimental animals were kept in "hypokinetic" cages and the control animals under ordinary conditions. The animals were fed a standard diet.

On the first, fifth, tenth, fifteenth, thirtieth, forty-fifth and sixtieth days after onset of the experiment the rats were intraperitoneally injected with narcotics in the following doses: hexanal -- 360-565 mg/kg, chloral hydrate -- 530-700 mg/kg, urethane -- 1,200-2,000 mg/kg.

The change in animal body reactivity was judged from LD50 (the lethal dose causing a 50% death of the animals in the experiment and in the control) and from the time of onset of sleep.

SPRS 56455  
14 JULY 72

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USSR

UDC 658.5-62.503.55

ALIYEV, T. M., Dr Technical Sciences, Engineers KAPLAN, G. A., KORSH, B. S.,  
and SEYDEL', L. R.

"One Approach to Optimization of Continuous Production Processes"

Moscow, Pribery i Sistemy Upravleniya, No 10, 1971, pp 5-6

Abstract: An attempt is made to formulate and solve a problem of stochastic programming associated with the random character of applying the solution abstracted from the random character of the coefficients of the problem. This approach permits the researcher to: (1) find solutions in the application of which the given system of limitations is satisfied with slight errors; and (2) evaluate, from the viewpoint of satisfying the assigned limitations, the degree of influence exerted by measurement accuracy on the specific function, which procedure, in turn, makes it possible to formulate feasible requirements for accuracy of the measuring instruments. This article is concerned with solving the first problem. The authors give the requirements and solve the problem mathematically.

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SEYDMAN, L. A.

SPK 5 58203  
6-73

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IX. 4b. STUDY OF THE MECHANISM OF GROWTH AND ALLOYING OF AUTOEPITAXIAL LAYERS ON CONDENSATION FROM MOLECULAR BEAMS IN A VACUUM

[Article by L. A. Seydman, L. N. Nemirovskiy, Yu. D. Gulyakov, N. S. Belykh, I. I. Stetskiy, and I. I. Shteyn, *Journal of Surface Phenomena*, 1972, p. 117]

A report is given on the results of studying the growth of autoepitaxial layers of germanium with condensation from molecular beams in a vacuum of  $1 \cdot 10^{-6}$  mm Hg obtained by means of a vapor-off pump. Studies were made of the initial growth stages of the Ge autoepitaxial layers at condensation temperatures of 620-920°C and with a growth rate of 100 Å/sec. It is demonstrated that growth begins with nucleation, growth and coalescence of three-dimensional growth islands. The higher temperatures correspond to larger diameters of the islands and lower density of them. The stage of islet growth defines the surface morphology of the epitaxial layer in the following growth stages.

It is demonstrated that the degree of perfection of the crystal lattice of the epitaxial layer and its surface morphology essentially depend on the surface structure of the substrate. The substrate surface was bombarded with argon ions in a vacuum of  $2 \cdot 10^{-6}$  mm Hg directly before growing. This treatment cleans the surface of the oxide layer and other contaminants. Here, the number of defects in the crystal lattice of the autoepitaxial layer of germanium is reduced by two or three orders.

Studies were made of the condensation, diffusion and reevaporation of impurity atoms with growth of the germanium autoepitaxial layers. It was demonstrated that it is possible to find conditions which insure reproducible deposition of the epitaxial layers with a high alloying level.

A study was made of the possibility of the occurrence of the mechanism by the vapor → autoepitaxial layer and vapor → liquid → autoepitaxial layer schemes.

4(3)

USSR

UDC 621.52:539.23

TERENT'YEV, YU.P., ISHIMBAYEV, R.V., LIKHTMAN, A.YE., NEMIROVSKIY, L.N.,  
SEYDMAN, L.A., SUVUROV, V.N., MOROZOV, G.A.

"Vacuum Deposition Unit With Electron Beam Evaporator [DE-394, 11 pp, 2 fig]

Elektron. prom-st'. Nauch.-tekhn.sb (Electronics Industry. Scientific-Technical  
Collection), 1971, No 3, p 62 (from RZ--Elektronika i yeye primeneniye, No 3,  
March 1971, Abstract No 3A45)

Translation: A vacuum deposition device was developed with an electron beam  
evaporator for deposition of layers of metals and semiconductors during their  
evaporation by the non-crucible method. The evaporator consists of an electron  
gun, a focusing and defocusing system and a magnetic prism. Use of the magnetic  
prism, which turns the electron beam by 90°, makes it possible to eliminate  
completely covering up [zapyleniye] of the electron gun by the material being  
evaporated. The gun is removed from the evaporation zone and consequently heating  
of the substance being evaporated and the gas precipitated on it does not affect  
it. This assures great reliability of evaporation, the period of continuous opera-  
tion of which  $\geq 50$  hours and is determined only by the lifetime of the cathode  
of the electron gun. The diameter of the evaporation zone with an accelerating  
voltage of 20 kv and a beam current up to 25 mA is not more than 1 mm. The dis-  
tance from the evaporation zone to the substrate is 60 mm. A.P.

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- 180 -

Acc. Nr:

AP0049646

Abstracting Service:  
CHEMICAL ABST. 5-70

Ref. Code:

URO202

Ref. Code:

UR 0702

104091h Ultrasonic absorption in ethylene glycol, glycerol, and diethylene glycol. Berdyev, A. A.; Khemrasy, B.; Sildov, A. (Fiz.-Tekh. Inst., Ashkhabad, USSR). *Izv. Akad. Nauk Turkmen. SSR, Ser. Fiz.-Tekh., Khim. Geol. Nauk* 1970, (1), 98-101 (Russ). The ultrasonic absorption of ethylene glycol (I), glycerol (II), and diethylene glycol (III) was studied at 5-40° with the frequencies,  $\nu$ , at 20-1000 MHz. The quantities detd. were the absorption coeff. of the ultrasound,  $\alpha$ , measured by the impulse method, as well as the ultrasound velocity,  $v$ , the viscosity,  $\eta$ , and the d.,  $d$ . Thus, the values found at 30° were as follows [compd.,  $d$ ,  $\eta$  in P,  $v$  in m/sec, and Stokes absorption characteristics ( $\alpha/\nu^2$ )  $\times 10^{-12}$  in cm<sup>-1</sup> sec<sup>2</sup> are given]: I, 1.1034, 0.15, 1645, 81; II, 1.2458, 2.57, 1904, 797; III, 1.1095, 1.78, 1568, 1093. The spectrum of relaxation times was broad at the frequencies and temps. studied. The use of the method of reduced variables for I and III shows the temp.-frequency dependence to be identical for all relaxation times. C. Parkanyi -

REEL/FRAME  
19801545

USSR

UDC: 534.131:629.7

Yershov, V. V., Seyfer, D. V.

"Determination of Natural Oscillating Frequencies of Cylindrical Shells of Variable Thickness"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 1, 1972, pp 35-42.

Abstract: This article states the problem of determination of the natural oscillating frequencies of cylindrical shells, the thickness of which changes along the generatrix according to linear, parabolic and hyperbolic rules. The problem is solved by an energetic method. Only axisymmetrical oscillations are studied. With these oscillations, it is sufficiently accurate to consider only radial displacement. Axial displacement is absent, and longitudinal displacement is slight in comparison to radial displacement, and therefore can be ignored.

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1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--VALENCE VIBRATION FREQUENCIES AND DISTRIBUTION OF ELECTRON DENSITY  
IN COMPLEX IRON CYANIDES -U-  
AUTHOR-(03)-NEKRASOV, B.V., SEYFER, G.B., KHARITONOV, YU.YA.  
COUNTRY OF INFO--USSR  
SOURCE--IAV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 266-71  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--IRON COMPOUND, CYANIDE, FERROCYANIDE, ELECTRON DENSITY,  
CHEMICAL VALENCE, VIBRATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1997/1509 STEP NO--UR/0062/70/000/002/0266/0271  
CIRC ACCESSION NO--AP0120290  
UNCLASSIFIED



2/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120290

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLES ARE GIVEN FOR BOND POLARITIES, ELECTRON AFFINITIES AND EFFECTIVE AT. CHARGES IN METAL FERROCYANIDES OF THE COMMON METALS AND METAL FERRICYANIDES OF THE SAME METALS. WITH INCREASING ELECTRON AFFINITY IN THE INNER SPHERE CATION, THE C TRIPLE BOND N BOND ENERGY INCREASES ALMOST LINEARLY, THUS EXPLAINING THE NEARLY LINEAR INCREASE OF IR BAND FREQUENCY OF THIS BOND.

A SIMILAR VARIATION WAS FOUND FOR THE FE-C BOND, BUT THE EFFECT WAS LESS PRONOUNCED.

FACILITY: INST. OBSHCH. NEORG. KHIM. IM.  
KURNAKOVA, MOSCOW, USSR.

USSR

UDC 538.214:546.723'267

BELOVA, V. I., and SEYFER, G. B., Institute of General and Inorganic Chemistry  
Imeni N. S. Kurnakov, Acad. Sc. USSR

"Magnetic Susceptibility of Ferricyanides"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, Jul 72,  
pp 1474-1480

Abstract: Magnetic susceptibility was measured in temperature range 80-300°K for ferricyanide complexes with mono-, di-, and trivalent cations and for polycyanides containing another element from the first transition row, in addition to iron. The effect of the cations on magnetic properties of the ferri complexes of iron (III) are negligible. The polycyanides studied have a complex magnetic structure. Manganese and cobalt complexes show antiferromagnetic interaction between the magnetic centers, while nickel and copper exhibit the ferromagnetic activity.

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CSO: 1841-W

1/1

- 80 -

1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--PREPARATION AND SOME PROPERTIES OF ZINC CYANAMIDE -U-  
AUTHOR--(05)-GALOCHKINA, G.M., GORYUNOVA, N.A., SEYFER, G.B., VAYPOLIN,  
A.A., KHARITONOV, YU.YA.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 486-92  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PHYSICAL CHEMISTRY PROPERTY, IR SPECTRUM, ABSORPTION SPECTRUM,  
THERMAL DECOMPOSITION, CYANAMIDE, ZINC COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1994/1901 STEP NO--UR/0363/70/006/003/0486/0492  
CIRC ACCESSION NO--AP0115720  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115720

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING INVESTIGATION OF THE  
Zn(OAC) SUB2 H SUB2 NCN SUB2 H SUB2 O NH SUB4 OH SYSTEM BY PHYS. CHEM.  
ANAL. METHODS, THE FORMATION OF ZNCN SUB2 AND BASIC (Zn(OH)) SUB2 CN  
SUB2 WAS ESTABLISHED. IN THE ABSENCE OF A CONST. GAS EXCHANGE THE  
THERMAL DECOMP. OF ZNCN SUB2 PROCEEDS AT GREATER THAN 824 DEGREES WITH  
THE EVOLUTION OF N AND THE FORMATION OF METALLIC ZN AND FREE C. THE D.  
OF NORMAL ZNCN SUB2 WAS DETD. TO BE 2.825 G-CM PRIME3 AND THE WIDTH OF  
THE FORBIDDEN BAND WAS SIMILAR TO 3.1 EV. THE IR ABSORPTION SPECTRA OF  
NORMAL CYANAMIDES OF ZN AND CD WERE STUDIED, ATTESTING TO THE SYM.  
STRUCTURE OF THE CYANAMIDE GROUP IN BOTH COMPOS. FACILITY: FIZ.  
TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 577.4

LAZAREV, V. G., SEYFULLA, I. D.

"Cycle-by-cycle Realization of an Automaton"

Avtomaty i Upr. [Automata and Control--Collection of Works], Moscow, Nauka Press, 1972, pp 27-34 (Translated from Referativnyy Zhurnal Mekhanika, No 11, 1972, Abstract No 11V351 from the resume)

Translation: A cycle-by-cycle realization of automata is suggested in homogeneous media, based on time decomposition of the structure of the automata. The algorithm for functioning of the automaton (consisting of adjustment codes) is introduced to the control structure of the homogeneous medium, which constructs the circuit of the automaton alternately in two sectors of the homogeneous medium.

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USSR

UDC 8.74

SEYFULLA, I. D., SOLOV'YEV, A. V.

"Program for Analyzing Automata Implemented in Homogeneous Environments"

V sb. Avtomaty i upr. (Automata and Control--collection of works), Moscow, Nauka, 1972, pp 38-39 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V423)

Translation: An analysis program is described which permits us to obtain formulas for functions at the outputs of environmental cells participating in the implementation of an automaton circuit. The flow chart of the program is presented.

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USSR

UDC: 577.4

SEYFULLA, I. D.

"Elimination of Critical Competition in an Asynchronous Automaton Produced in a Matrix Homogeneous Medium"

Avtomaty i Upr. [Automata and Control--Collection of Works], Moscow, Nauka Press, 1972, pp 35-38 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V328)

Translation: A method is suggested for elimination of competition in asynchronous automata realized in a homogeneous matrix medium.

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USSR

UDC 681.3.001:51

SEYFULIA, I.D.

"A Type of Homogeneous Medium with Individual Tuning of Elements"

V sb. Diskretn. avtomaty i seti svyazi (Digital Automata and Communications Networks -- Collection of Works), Moscow, Nauka Press, 1970, pp 77-82 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 2, Feb 71, Abstract No 2B21)

Translation: A version of a homogeneous medium suitable for constructing circuits of digital devices is proposed. The specific characteristics of the proposed medium insure an increase in speed of the automatic machine, which will depend weakly on the increase in its complexity, and a decrease in the total number of elements of the medium required for its realization by comparison with an automatic machine executed using a medium an element of which satisfies the "Peirse indicator" function. Some methods of realizing switching functions in the proposed medium are investigated, and evaluations of the complexity and speed of the automata realized are investigated. There are 3 illustrations and a 3-entry bibliography.

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USSR  
Automata

USSR

UDC 577.4

SEYFULLA, I. D.

"Avoiding Critical Conflicts in an Asynchronous Automation Achieved in a Matric, Homogeneous Medium"

V sb. Avtomaty i upr. (Automata and Control -- Collection of Works), Moscow, "Nauka," 1972, pp 35-38 (from RZh-Matematika, No 11, Nov 72, Abstract No 11V328)

Translation: A method is proposed for avoiding conflicts in the circuit of an asynchronous automaton achieved in a matric, homogeneous medium.

1/1

USSR

SERGEYEV, P., Professor, Director of the Chair of Molecular Pharmacology and Radiobiology, 2d Moscow Medical Institute imeni N. I. Pirogov, and SEYFULLA, R., Doctor of Medical Sciences

"Molecular Pharmacology"

Moscow, Meditsinskaya Gazeta, 14 Jun 72, p 3

Abstract: Various preparations, by acting upon cell membranes, can regulate most intracellular processes. Molecular pharmacology should reevaluate pharmacologically active substances and predict the possible mechanisms of their action, calculating the molecular orbits of pharmaceutical preparations and evaluating the reactive properties of individual atoms in their molecules. The most important cell structures upon which various therapeutic substances can act should be determined and the pharmacology of cytoplasmatic membranes and membranes of subcellular organelles investigated. Studies have demonstrated the possibility of identifying receptor molecules for pharmaceutical preparations and the fact that definite relationships can be established between the substance and a receptor. As a result, the active conformation of biomolecules can be altered and conditions produced for the activation or inhibition of enzymes. Learning to regulate the functional state of the genetic apparatus

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USSR

SERGEYEV, P., and SEYFULLA, R., Meditsin kaya Gazeta, 14 Jun 72, p 3

of cells and the synthesis of protein, DNA, and RNA in certain organs may lead to the prevention of many complications produced by medications. It is important to establish the effect of medicinal preparations on lysosomal enzymes and membranes in order to evaluate the metabolism process in the cell, since lysosomes play a most important part in the genesis of anaphylactic shock, various allergic reactions, inflammatory process, and so on. All tests in molecular pharmacology should be performed under laboratory conditions, lest the wrong conclusions be reached. Among the aims of molecular pharmacology are immunopharmacology, regulation of memory, and molecular aspects of the effect of radioprotectors and cytostatic preparations.

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1/2 006 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--SOLVOLYSIS OF GERMANIUM TETRACHLORIDE IN NONAQUEOUS MEDIA -U-  
AUTHOR-(03)-BELOUSOVA, YE.M., SEYFULLINA, I.I., BOBROVSKAYA, M.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 996-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--GERMANIUM COMPOUND, CHLORIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1999/1075 STEP NO--UR/0078/70/015/004/0996/0999  
CIRC ACCESSION NO--AP0123068

UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123068

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF THE SOLVENT ON COMPLEX FORMATION OF GECL SUB4 WITH N CONTG. SUBSTANCES WERE STUDIED CONDUCTOMETRICALLY IN NONAQ. MEDIA TO CLARIFY THE SOLVOLYSIS OF GECL SUB4 IN ME SUB2 CO OR ACOH. THE DEGREE OF SOLVOLYSIS IS GREATER IN ACOH THAN IN ME SUB2 CO. SOLVOLYTIC CONSTS. IN ACOH ARE 8.7 TIMES 10 PRIME NEGATIVE6 AND 2.74 TIMES 10 PRIME NEGATIVE11 (K SUB1 AND K SUB2, RESP.). FACILITY: ODESS. GDS. UNIV. IM. MECHNIKOVA, ODESS, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--COMPLEXES OF GERMANIUM TETRACHLORIDE WITH O AND M AMINOBENZOIC  
ACIDS -U-  
AUTHOR-(03)-BELOUSOVA, YE.M., SEYFULLINA, I.I., STASENKO, I.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 815-17  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--GERMANIUM COMPOUND, AMINE, BENZOIC ACID, COMPLEX COMPOUND,  
THERMOGRAPHIC ANALYSIS, POTENTIOMETRIC TITRATION, X RAY DIFFRACTION  
STUDY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/0822 STEP NO--UR/0079/70/040/004/0815/0817  
CIRC ACCESSION NO--AP0134555  
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134555

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMOGRAPHIC AND CONDUCTIMETRIC TITRIMETRY WERE USED TO STUDY THE COMPLEXES FORMED BY G AND M H SUB2 NC SUB6 H SUB4 CO SUB2 H WITH GECL SUB4 IN VARIOUS SOLVENTS. THE FOLLOWING WERE ISOLATED: GECL SUB4 TIMES 4 (O H SUB2 NC SUB6 H SUB4 CO SUB2 H) TIMES 2 ACOH, M. 180DEGREES, WHICH LOST THE ACOH IN SEVERAL MONTHS IN OPEN AIR; IN CCL SUB4 THE PRODUCT WAS GECL SUB4 TIMES 6 (O H SUB2 NC SUB6 H SUB4 CO SUB2 H), M. 160DEGREES; GECL SUB4 TIMES 4 (M H SUB2 NC SUB6 H SUB4 CO SUB2 H), M. 270DEGREES. X RAY DIFFRACTION DATA WERE TABULATED FOR THE COMPLEXES. THE COMPLEX OF THE META ISOMER WAS MORE STABLE THERMALLY THAN THAT OF THE ORTHO ISOMER. FACILITY: ODESS. GOS. UNIV. IM. MECHNIKOVA, ODESSA, USSR.

UNCLASSIFIED

USSR

UDC: 541.49-547.583.5:543.257-546.289-547.289

BELOUSOVA, YE.M., SEVEILLINA, I.I., and STASENKO, I.V., Odessa State University  
imeni I.I. Mechnikov, Odessa, Ministry of Higher and Secondary Specialized  
Education Ukrainian SSR

"Complex Compounds of Germanium Tetrachloride With o- and m-Aminoben-  
zoic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 815-817

Abstract: The interaction of germanium tetrachloride with o- and m-aminobenzoic acid (OAB and MAB) from solutions in acetic acid and carbon tetrachloride gives compounds of the composition  $\text{GeCl}_4 \cdot 4\text{OAB}$ .

$2\text{CH}_3\text{COOH}$ ,  $\text{GeCl}_4 \cdot 4\text{MAB}$ ,  $\text{GeCl}_4 \cdot 6\text{OAB}$ . The individuality of the compounds was confirmed roentgenographically by comparing the calculated interplanar spacings of the initial and resultant substances. A thermographic study showed that the compound containing six OAB molecules is thermally less stable than the compound with four molecules, but they are more stable than the initial anthranilic acid. The complex compound with MAB is thermally more stable than the compounds with OAB.

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1/2 008 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--INTERACTION OF GERMANIUM TETRACHLORIDE WITH NICOTINIC ACID -U-

AUTHOR--(02)-BELOUSOVA, YE.M., SEYFULLINA, I.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 579

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PRECIPITATION, GERMANIUM COMPOUND, CHLORIDE,  
NICOTINIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1987/0791

STEP NO--UR/0078/70/015/002/0579/0579

CIRC ACCESSION NO--AP0104237

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104237

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FINE CRYST. PPT. SEPD. ON MIXING  
GECL SUB4 WITH NICOTINIC ACID IN A 1:4 MOLE RATIO. THE PPT. HAS THE  
COMP. C SUB24 H SUB20 CL SUB4 GEN SUB4 O SUB8, IT IS STABLE IN ATM. AND  
M. 254DEGREES. IT HYDROLYZES WHEN DISSOLVED IN H SUB2 O.

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UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--USE OF THE WELDING TTT (TIME TEMPERATURE TRANSITION) DIAGRAM FOR ST  
45-60C TYPE STEEL -U-  
AUTHOR--SEYFFARTH, P.

COUNTRY OF INFO--USSR

SOURCE--SCHWEISSTECHNIK (BERLIN) 1970, 20(1), 13-20

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--THERMAL EFFECT, HARDNESS, METAL MICROSTRUCTURE, STEEL  
WELDING/(U)ST45-60C STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0342

STEP NO--UR/0014/70/020/001/0013/0020

CIRC ACCESSION NO--AP0108640

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UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0108640

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEST PIECES OF ST 420-2 STEEL, 350 TIMES 145 TIMES 12, 18, AND 24 MM WERE USED IN DETG. THE COOLING RATE OF THE WELDING BEAD. THE E, SHIELDED GAS (CO SUB2), AND SUBMERGED ARC WELDING PROCESSES WERE USED, AND THE TIME FOR THE BEAD TO COOL FROM 850 TO 500DEGREES WAS DETO. HARDNESS TESTS WERE MADE AND MICROSTRUCTURES EXAMD. IN COMPARING THE RESULTS OBTAINED WITH THOSE PREDICTED FROM EXAMN. OF THE TTT DIAGRAM A VERY GOOD AGREEMENT WAS FOUND AS TO STRUCTURE OF THE HEAT AFFECTED ZONE AT WELDING BEADS AND HARDNESS. WHERE THERE WERE SLIGHT DEVIATIONS THE TTT DIAGRAM VALUES WERE ON THE SAFE SIDE. THE INFORMATION AVAILABLE FROM THE TTT DIAGRAMS IS USEFUL IN SELECTING THE BEST WELDING PROCESS AND PREHEATING TEMP.

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UNCLASSIFIED

USSR\

UDC 628.165:542.65

KOLODIN, M. V., SEYITKURBANOV, S., and MILONOV, V. V.

"Washing of Ice Crystals in a Washing Column During Desalination of Salt Water by Freezing"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 6, 1971, pp 20-22

Abstract: It has been established experimentally that the effectiveness of ice crystal washing in a countercurrent wash column depends principally on the height of the washing zone  $H_k$ , the rate of ascension of ice in the column  $v_l$ , consumption of fresh water for the washing of ice crystals  $f$  and on the dimensions of the crystals being treated  $d_{cr}$ . A nomograph has been plotted from which these parameters could be determined for given salinity of the water being treated. Consumption of fresh water for washing the crystals in a countercurrent column is much lower than in a centrifugal apparatus. Furthermore, the treatment of a suspension in a field of centrifugal forces requires a very complicated apparatus, adding to the overall cost of the process.

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USSR

UDC 539.3+534.231.1

SEYMOV, V. M., OSTROVERKH, B. N.

"Calculation of Nonstationary Longitudinal Oscillations of a Plate Reinforced at the Edge of the Half-Space"

Tr. koordinats. sovesch. po gidrotekhn. (Works of the Coordination Conference on Hydraulic Engineering), 1972, No. 64, pp 61-69 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V85)

Translation: The nature of the propagation of elastic waves in a plate fastened by one edge to the boundary of a half-space is investigated. The case of symmetric loading of the boundary of the half-space is considered when only symmetric oscillations arise in the half-space and longitudinal waves are propagated in the plate. Stresses along the contact of the plate and the half-space are taken as uniformly distributed. Graphs are given for the change of stresses and displacements with time for a sudden application of loads to the boundary of the half-space and the upper edge of the plate, and for different relationships of the elastic modulus of the plate and the elastic modulus of the half-space. Authors' abstract.

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USSR

UDC 539.3+534.231.1

KULENKO, N. P., SEYMOV, V. M.

"Steady-State Antisymmetric Oscillations of a Belt of Finite Rigidity on an Elastic Half-Plane"

Tr. koordinats. sovesch. po gidrotekhn. (Works of the Coordination Conference on Hydraulic Engineering), 1972, No. 64, pp 69-76 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V87)

Translation: The problem of periodic fluctuations of an elastic band of finite length on an elastic half-plane under the action of antisymmetric loads is considered. Normal reactions along the contact, bending of the band, angles of twist, bending moments, intersecting forces, resonance frequencies, and displacements of the boundaries of the half-plane corresponding to waves propagating from the band are sought. The solution for normal reactions along the contact is sought in the form of a series in terms of Chebyshev polynomials with complex indeterminate coefficients. The problem is solved by the integral Fourier transformation method. 5 ref. Authors' abstract.

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USSR

UDC 539.3+534.231.1

SEYMOV, V. M.

"Vertical Nonstationary Oscillations of a Rigid Stamp on an Elastic Half-Plane"

Tr. koordinats. sovesch. po gidrotekhn. (Works of the Coordination Conference on Hydraulic Engineering), 1972, No. 64, pp 53-60 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V86)

Translation: The problem of simultaneous oscillations of a stamp and an elastic half-plane under the action of a vertical load suddenly applied to the stamp is discussed. Normal contact stresses and displacements of the stamp are sought. The differential equations for the motion of the stamp and the elastic half-plane are taken as given and are solved by the method of integral Laplace transformations (with respect to time) and Fourier transformations (with respect to the spatial coordinate). Contact stresses are sought in the form of a series in terms of Chebyshev polynomials with coefficients that are functions of time. Examples are discussed. Graphs are given showing the change with time of contact stresses and displacements of stamps of different dimensions under loads that are suddenly applied and then remain constant and under brief loads. 9 ref. Author's abstract.

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Composite Materials

USSR

UDC 669.71'782'3

KOVAL', A. D., NATAPOV, YE. B., LEZHENKO, G. G., SEYN, V. I., SHEGAY, A. A., and SHMAKOV, A. M., Zaporozh'ye Machine Building Institute, Department of Physical Metallurgy

"Molybdenum and Tungsten Fibers as a Strengtheners of a Heat-Resistant Composite"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 4, 1973, pp 153-155

Abstract: This work was conducted to study certain mechanical properties of wire, made at the Uzbek Refractory and Heat-Resistant Materials Combine (URHRMC), and the American alloy TZM, and to explain the possibilities of realizing the strength of molybdenum wire in a composite. Materials for this study were molybdenum and tungsten wires grades MCh and MK, made at URHRMC, experimental wire ChZM, and tungsten wire grade VA. A matrix of alloy EI435 was used with filler wire 0.5 mm in diameter. Volume content of wire in the alloy was 24%. Results of determining tensile strength showed that wire MCh had the lowest mechanical properties at 800-1200°C. Experimental alloy ChZM surpasses the short-time strength of molybdenum alloys TZM, MCh, MK and ChZM (not heat treated) after heat treatment. Tensile strength of EI435+30% MCh at 1100°C in the initial state and after annealing for 500 hours was 11-14 kg/mm<sup>2</sup>. The 1/2

USSR

KOVAL', A. D., et al., Izvestiya Vysshikh Uchebnykh Zabedeniy--Chernaya Metallurgiya, No 4, 1973, pp 153-155

following table shows the tensile strengths and short-time strengths of EI435 with different combinations of wire filler:

	TS(1100°C)	STS(1200°C)
EI435+30% MCh	13.6 kg/mm <sup>2</sup>	---
EI435+24% VA	19	16.4 kg/mm <sup>2</sup>
EI435+24% ChZM	22.2	17

Thus, the composite EI435+24% ChZM has the best properties above 1100°C and shows the best prospects as a filler wire reinforcing material. 2 figures, 1 table, 3 bibliographic references.

2/2

- 4 -

USSR

UDC 615.372:576.851.553/.012

SEYRANYAN, I. B., and BLAGOVESHCHENSKIY, V. A., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

"Preparation of a Purified and Concentrated Botulinus Toxoid Type B"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apt 71, p 142

Abstract: The purpose of the work conducted was preparation of a highly purified and concentrated botulinus toxoid type B by a simple and cheap method that would be suitable for the mass production of the septatoxoid developed in 1968 at the Institute imeni Gamaleya. Toxoids were prepared by detoxifying with formalin and heat (37°C toxic filtrates from cultures of Cl. botulinum, Type B, strain No 175. The cultures had been grown on casein nutrient media of different composition (a casein-fungus medium or casein acid hydrolysate to which 2% vitamin B complex or yeast water and 5% corn extract had been added). The activity of the initial (natural) toxoids varied in the 7-20 SU/ml range. Their content of total and protein N also varied considerably. The first purification stage consisted of precipitation with 1 N HCl in the isoelectric range in the presence of 15% NaCl. The pH at the isoelectric point varied in the 2.9-3.5 range for different series. The precipitate was 1/2

USSR

SEYRANYAN, I. B., and BLAGOVESHCHENSKIY, V. A., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71, p 142

separated by centrifuging and dissolved in physiological saline, concentrating the toxoid by a factor of 10; then the pH was brought to 7-8 with NaOH. The yield of active substance in the concentrate was 65-92.8%; the purification was 98-99.3 and 86-98.8% with reference to total and protein N, respectively; and the increase in specific activity was by a factor of 12-67. Thus, the principal amount of extraneous nitrogen was removed in the first purification stage. To purify the concentrates further, the simplest method that gave the best yield was precipitation with acetone at a low temperature. The primary concentrate cooled to minus 20°C was precipitated with an equal volume of acetone brought to the same temperature. The precipitate was dissolved in physiological saline, concentrating it in the process by a factor of 3-4. As a result purification with respect to the natural toxoid reached 99.3-99.6% and 98.9-99.7% in regard to total and protein N, respectively. The specific activity increased by a factor of 1.3-2.6 vs. that of the primary concentrate and by a factor of 21-85 vs. that of the natural toxoid, amounting on the average to 414.9 SU/mg protein N. The mean yield of antigen reached 81.8%.

2/2

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1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--EFFECT OF IONIZING RADIATION ON THE LEVEL OF HISTONES AND DNA IN  
PLANT CELL NUCLEI -U-  
AUTHOR-(03)-KUZIN, A.M., MALTSEV, A.V., SEYSEBAYEV, A.T.  
COUNTRY OF INFO--USSR  
SOURCE--RADIOBIOLOGIYA 1970, 10(1), 103-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--GAMMA RADIATION, RADIATION BIOLOGIC EFFECT, PLANT PHYSIOLOGY,  
DNA, PHOTOMETRY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/0244 STEP NO--UR/0205/70/010/001/0103/0105  
CIRC ACCESSION NO--AP0119240  
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0119240

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEEDS DRIED IN AIR WERE IRRADIATED WITH PRIME137 CS GAMMA RAYS IN DIFFERENT DOSES ACCORDING TO DIFFERENT RADIOSENSITIVITIES OF INDIVIDUAL PLANTS: VICIA FABA 0.1 AND 10 KR; TRIFOLIUM PRATENSE 10 AND 200 KR. THE IRRADIATED SEED WERE KEPT IN WATER FOR 24 HR AT ROOM TEMP. DNA AND HISTONES WERE DETD. IN SHELLS OF SEEDS BY A CYTOPHOTOMETRIC METHOD. THE AMT. OF DNA IN NUCLEI AFTER THE STIMULATING DOSES DID NOT DIFFER FROM THAT IN CONTROLS, WHEREAS THE LEVEL OF HISTONES WAS DECREASED BY 9PERCENT. AFTER IRRADN. WITH WITH LETHAL DOSES, STRONG DEPRESSIONS WERE OBSERVED IN BOTH HISTONE AND DNA LEVELS (20 AND 15PERCENT, RESP.). FACILITY: INST. BIOFIZ., PUSHCHINO, USSR.

UNCLASSIFIED

USSR

UDC 519.5:62-50

SEYSOV, Yu. B., Physicotechnical Institute, Turkmenistan SSR

"Cone of Attainability in the Theory of Optimal Processes"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR -- Seriya Fiziko-tehnicheskikh, Khimicheskikh i Geologicheskikh Nauk, No 5, 1972, pp 10-14

Abstract: The problem of the four following relationships is considered:

$$x^0(t_1) = \min_U;$$

$$\dot{x} = F(x, u), t \in [t_0, t_1], x \in E_{n+1}, x = (x^0, x), F = (f^0, f);$$

$$u \in U \subset E_r;$$

$$x_0 = x(t_0); x^0(t_0) = 0; x(t_1) = x_1, \quad (1)$$

where  $F(x, u)$  is continuous for all arguments and is continuous and  
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USSR

SEYSOV, Yu. B., Izvestiya Akademii Nauk Turkmenskoy SSR -- Seriya Fiziko-tekhnicheskikh, Khimicheskikh i Geologicheskikh nauk, No 5, 1972, pp 10-14

differentiable with respect to  $X$ , and  $U$  is a compactum. The problem of these four relationships is considered to be in the class of  $D^0(x_1)$  permissible solutions defined by the second and fourth relationships; the class  $D^0(x_1)$  is a combination of the absolutely continuous functions  $\bar{X}(t)$  which satisfy relationship (1).

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USSR

UDC: 621.315.592

AGEKYAN, V. T., ZAKHARCHENYA, B. P., IL'IN, V. V., SEYSYAN, R. P.,  
STEPANOV, Yu. A., and SHIRYAPOV, I. P.

"Exciton Magnetic Absorption in  $\text{SnO}_2$  Monocrystals"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1924-1930

Abstract: This article is in the nature of a recapitulation of experimental work on the absorption spectra of various materials in a magnetic field, with the accent on prior papers published by the authors named above. Recent experiments in the spectroscopic examination of germanium testifying to the exciton origin of magnetic absorption oscillations are cited. The authors of the present paper, however, list a number of reasons for using  $\text{SnO}_2$  in such experimentation for a magnetic field of more than 10 kOe, arguing that it is uniquely suited for clarifying the role of Coulomb interaction in magnetic absorption oscillation spectra. Referring to an experiment described in an earlier paper they published (Agekyan, V. T., et al, PTE, 2, 182, 1972), using a pulse electromagnet, a liquid helium cryostat, an ISSh-500 pulse lamp, and a DFS-8 spectrograph, they reproduce the basic result of that

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USSR

UDC: 621.315.592

AGEKYAN, V. T., et al, Fizika i tekhnika poluprovodnikov, No 10,  
1972, pp 1924-1930

experiment -- a plot of the positions of absorption maxima in the  
SnO<sub>2</sub> spectrum as a function of the magnetic field intensity.

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USSR

UDC 621.396.6-181.5

SEYGOYAN, R. P., YAKOVLEV, Yu. K.

"Large-Scale Hybrid Integrated Circuits"

Izv. Leningr. elektrotekh. in-ta (News of the Leningrad Electrical Engineering Institute), 1971, vyp. 92, pp 10-12 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7V278)

Translation: A comparison is drawn between the two areas of large-scale integration -- the area based on semiconductor microcircuits (LSI) and the area based on hybrid microcircuits (LSHI). The advantages of LSHI in the economic sense and from the standpoint of generality are pointed out. It is noted that the job of developing a circuit board for LSHI may be dealt with as an independent problem. A circuit-board technology is described which combines thin-film and thick-film techniques. An optimum version of a circuit with an overall level of integration of up to 30 and low cost is constructed as an example of developing integrated circuitry for television receivers. One illustration. N. S.

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UDC 621.315.592

USSR

SEYSYAN, R. P., ABDULLAYEV, M. A., ZAKHARCHENYA, B. P.

"Exciton Structure of the Fundamental Absorption Edge and Oscillating Magnetoabsorption in Gallium Arsenide Crystals"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 408-410

Abstract: A study was made of the structure of the fundamental absorption edge in "pure" gallium arsenide and obtaining the oscillating magnetoabsorption spectrum in it. The applicability of the conclusions of the role of exciton states in the formation of the spectrum drawn earlier when studying germanium crystals [R. P. Seysyan, et al., FTP, No 2, 1266, 1968; R. P. Seysyan, Author's Review of Candidate's Dissertation, Leningrad, 1969] was investigated. Epitaxial n-type GaAs crystals having a free carrier concentration on the order of  $n \approx 10^{14} \text{ cm}^{-3}$  and  $\mu_{77^\circ\text{K}} = (60-100) \cdot 10^3 \text{ cm}^2/\text{volt-sec}$  were used in the investigation. A figure is presented showing the absorption coefficient as a function of the photon energy for GaAs crystals at different temperatures in the coordinates  $(\hbar\nu)^2 - \hbar\nu$  rectifying the root dependence on energy characteristic of direct allowable transitions. In addition to the first sharp peak observed previously in gallium arsenide at low temperatures, a weak peak ~3.5 milli-electron volts from the other is observed. One obvious peak not observed

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USSR

SEYSYAN, R. P., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 408-410

earlier was found at room temperature. At energies exceeding the energy of the first peak by 40-50 millielectron volts, the experimental points lie on the straight lines

$$(Kh\nu)^2 = A^2(T)[h\nu - \epsilon_g(T)],$$

where  $A_{4.2^\circ K} \approx A_{77^\circ K} \approx 1.12 \cdot 10^5$ ,  $A_{300^\circ K} \approx 1.02 \cdot 10^5$  electron volts<sup>1/2</sup>/cm, and  $\epsilon_g$  is  $1.430 \pm 0.001$  electron volts at  $300^\circ K$ ,  $1.513 \pm 0.001$  electron volts at  $77^\circ K$  and  $1.521 \pm 0.001$  electron volts at  $4.2^\circ K$ . The data are compared with experiments performed by various authors earlier.

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USSR

UDC: 621.3.049.75

SEYSYAN, R. P., KHODAK, I. Ya.

"A Method of Making Gaps"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 10, Apr 71, Author's Certificate No 298086, Division H, filed 8 Sep 69, published 11 Mar 71, p 197

Translation: This Author's Certificate introduces a method of making gaps between electrodes in thin-film microcircuits produced by the method of photolithography. As a distinguishing feature of the patent, small gaps are made by using a phototemplate in which the elements of the drawing are two equal triangles joined at the corners. Two sides of one of these triangles are extensions of the other triangle, and the size of the gap is controlled by changing the angle at the vertex of the triangle as well as the etching time.

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USSR

UDC: [537.226+537.311.33] : [537+535]

PASYNKOV, V. V., SEYSYAN, Ye. L., TAIROVA, D. A., and TAIROV, V. N.

"Process of Electret Formation in Some Organic Films".

Elektron. tekhnika, Nauchn-tekhn. sb., Radiodetali (Electronics Engineering, Scientific-Technical Collection, Radio Parts--collection of works) No. 1(22), 1971, pp 57-65 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E885)

Translation: The average surface charge density in electrets made of polyethylene terephthalate, polycarbonate, and polytetrafluorethylene as a function of the maximum temperature of polarization and polarization intensity (field intensity) is investigated. The investigations were made by setting up the electret state by the contact method and polarization in an air gap. It is shown that in films made of organic polymers, it is possible to obtain a stable electret state without short-circuiting the charged surfaces of the electret. It is established that film electrets of polytetrafluorethylene (teflon), the surface charge density of which varies only slightly for more than one and a half years even under conditions of high relative humidity, are the most stable of the specimens investigated.

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USSR

SEYTBATALOV, S. M., and GENBACH, A. N.

"Acoustic Radiations of the Jet of Thermal Instruments With Chambers of Varying Volume"

Tr. Kazakhsk. politekhn. in-ta (Works of Kazakh Polytechnic Institute), 1970, sb. 31, pp 173-175 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B301 by Ye. F. Afanas'yev)

Translation: The article presents results of experimental research on aerodynamic noise created by rocket-type jet-flame burners, which are widely used for cutting, piercing and working minerals. It is noted that the general noise level declines with a decrease in the length of the combustion chamber. The authors present in the form of graphs the jet noise spectrum and noise level as a function of combustion chamber length.

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USSR

UDC 621.4/.6:533.6

ISTAYEV, S. I., SEYTBKOV, T., UVAKOV, A. B.

"Experimental Study of the Hydrodynamics of a Spherical Jet Device"

V sb. Prikl. i teor. fizika. Vyp. 3 (Applied and Theoretical Physics. No 3 -- Collection of Works), Alma-Ata, 1972, pp 250-256 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B434)

Translation: The results of an experimental study of the hydrodynamics of a spherical jet device are presented. The effect of the position of the working nozzle and the length of the cylindrical mixing chamber on the injection coefficient of the device was established. An empirical relationship was obtained giving the injection coefficient of the spherical jet device as a function of the ratio of the diameter of the mixing chamber and the diameter of the working nozzle. Authors' abstract.

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Pathology

USSR

UDC: 577.3

KLOCHKO, E.V., KOVAL'CHUK, L.V., KRUGLYAKOVA, K.YE., SEYTS, I.F., LUGANOVA, I. S., BLINOV, M.N., and EMANUEL', N.M., Academician, Institute of Chemical Physics, Academy of Sciences USSR

"Free Radicals and Metabolism in Leukocytes During Leukoses"

Moscow, Doklady Akademii Nauk, Vol 190, No 2, 1970, pp 476-479

Abstract: The content of free radicals in leukocytes from chronic lymphatic leukosis and chronic myeloid leukosis patients was studied after the cells were incubated with various metabolic poisons - monobromoacetate, sodium fluoride, 2,4-dinitrophenol, and oligomycin. The concentration of free radicals decreased by 50% after "leukemic" leukocytes were exposed to 2,4-dinitrophenol, an uncoupler of oxidative phosphorylation in the early stages. The use of oligomycin, an uncoupler of oxidative phosphorylation in the later stages, did not have an appreciable effect on the level of free radicals. The incubation of healthy leukocytes with 2,4-dinitrophenol or oligomycin likewise had no effect on the concentration of free radicals. The level of free radicals in the leukocytes of both leukotic patients and healthy persons was not affected either during inhibition of glycolysis with sodium fluoride or stimulation during anaerobiosis. Monobromoacetate, which blocks glycolysis, had a more pronounced effect. It would appear that the high content of free radicals in leukocytes during leukosis signifies a disturbance of oxidative phosphorylation.

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AA0044642

UR 0482

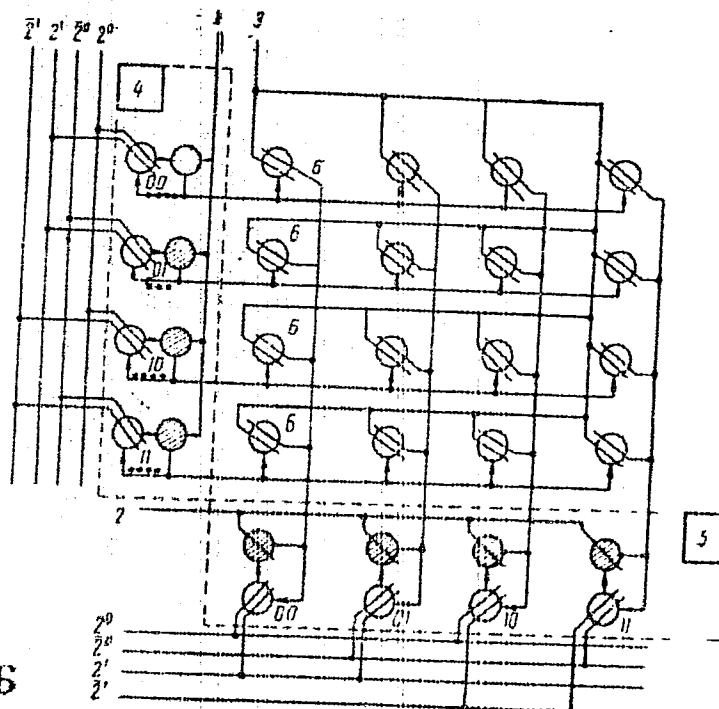
Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

239662 COORDINATE DECODER of binary code has the digit lines of the up-count connected with the inhibit windings of the generating units, in which the corresponding digit code combinations contain the "0"'s. The down-count digit lines are connected to inhibit windings of generating units which contain the "1"'s in the digits. The output lines of the pre-decoders are connected to the inputs of the coordinate matrix.

19.10.67 as 1190790/18-24. A.A. MOROZOV & V.A. SGADOVA  
(28.7.69) Bul 11/18.3.69. Class 42a<sup>3</sup>, 21a<sup>1</sup>. Int.Cl.  
G 06f, H 03k.

19771345

AA0044642



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19771346

USSR

SGALL, P., PANEVOVA, Ya.

"Basic Features of Semantic Enscription of Statements and its Formal Structure"

Nauch. Tekhn. Inform. Sb. Vses. In-t Nauch. i Tekhn. Inform. [Scientific and Technical Information, Collection of All-Union Institute for Scientific and Technical Information], 1972, Series 2, No 11, pp37-40 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V750, by the authors).

Translation: The basic features of a mathematical model of language developed at the Laboratory for Algebraic Linguistics (of Karl University, Prague) are described, and a review is presented of works thematically related to this model.

1/1

SGIBNEV, A.K.

SN: JAF-S 53389

17 Jun 91

UDC 612.015.3+612.46/-057:629.78

POSTHUMOUS RETENTION AND FUNERAL FUNCTION OF CREW MEMBERS ON  
SLEIGHT NO. 1, 'SOV-7,' and 'SOV-8,' FLIGHTS  
SLEIGHT NO. 2, 'SOV-6,' and 'SOV-9,' FLIGHTS

1

4500653

Article by I. S. Dzhuravskiy, and I. G. Orlovskiy, I. G. Dzhuravskiy, I. G. Orlovskiy, V. I. Gerasimov, A. A. Sidorov, A. A. Sidorov, Moscow, Zhurnal Khimicheskoy Biologii i Khimicheskoy Fiziki, 1971, No 3, pp. 374, submitted for publication 24 April 1970]

**Abstract:** Different metabolic parameters of crew members of the "Soyuz-6," "Soyuz-7," and "Soyuz-8" spacecraft were studied before and after the flight. Functional changes were observed, but these consisted in health hazard. Weight losses were associated with an increased excretion of water and minerals, as indicated by the post-flight retention of water, chloride, sodium and potassium in the body. The blood content of cholesterol, lipid phosphorus and sugar remained unchanged. No symptoms of disorders in adrenal function were noted.

Weight loss by comorants during flight and impairments in the renal water-retaining function thereafter have already been reported (Yu. V. Morozin, et al.; Ye. I. Vorob'ev, et al.; Perry and Peterson). Since the excretion of nitrogen with the urine did not increase, the weight decrease can be attributed only to denaturation, not to osmotic breakdown. Such conclusions were drawn as a result of observation of a relatively limited number of comorants. Accordingly, it was of interest to continue these observations by a detailed examination of the seven comorants making the trip flight on the "Soyuz-7," "Soyuz-8" ships at the same time; we traced their dynamics of excretion of electrolytes and studied their renal function.

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In the analysis we took 0.1 ml of blood from the finger and preserved it by drying on filter paper. We determined the content of sugar, urea, cholesterol and lipid phosphorus using an original method which makes it

USSR

UDC 577.1:615.7/9

ABIDIN, B. I., ASYAMOLOVA, N. M., SGIBNEV, A. K.

"Effect of Certain Toxic Gaseous Substances on the Resistance of Animals to Acute Hypoxic Hypoxia"

Moscow, V sb. Probl. kosmich. biol. (Problems of Space Biology-- collection of works), Vol 15, "Nauka," 1971, pp 154-164 (from RZh-Biologicheskaya Zhurniya, No 21, Nov 71, Abstract No 21F2185)

**Abstract:** The complex gas-air mixture resulting from thermo-oxidative destruction of a synthetic polymer based on pentaerythritol and fatty acids contained gaseous products belonging to various classes of compounds: esters, aldehydes, ketones, organic acids, alcohols, carbon monoxide and various other substances. Animals were inoculated in a 100-liter hermetically sealed chamber by a static method with exposure of one hour. Comparative data are presented on the change in EEG, EKG, and respiration of inoculated and intact rats under conditions of a rarefied atmosphere corresponding to an altitude of 10,000 meters. It was found that the gaseous chemical substances change the behavior of the organism

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USSR

ABIDIN, B. I., et al, v sb. Probl. kosmich. biol., Vol 16, "Nauka,"  
1971, pp 154-164

of the animals with respect to the action of hypoxic hypoxia,  
lowering the "physiological ceiling," and increasing the tolerance  
of acute oxygen starvation. Resume.

2/2

- 7 -



SHABAD, L. M.

JPRS 55320  
1 March 72

UDC: 614.777:1615.277.4:547.21

WATER POLLUTION BY CARCINOGENIC HYDROCARBONS AND SUBSEQUENT FATE OF THESE AGENTS  
Article by L.M. Shabad, A.P. Il'inskiy, Institute of Experimental and Clinical  
Oncology, USSR Academy of Medical Sciences, Moscow; Moscow, Vestnik Akademii  
Meditsinskikh Nauk SSSR, Russian, No 1, 1972, pp 35-42]

One of the factors determining the incidence of oncological pathology is believed to be environmental pollution with carcinogens. Development of industry, urbanization, as well as increased use of chemicals. Development of branches of the economy have resulted in access of chemicals in different of which have carcinogenic properties into the environment. In this connection, it is particularly important to pursue investigations dealing with carcinogenic pollution of the environment. We refer, first of all, to such widespread carcinogens as polycyclic aromatic hydrocarbons (PAH).

While the history of investigating carcinogenic PAH in atmospheric air dates back several decades, such studies directed toward the water environment were initiated relatively recently. Without going into the history of this matter, it must be stressed that the earliest works dealing with pollution of water reservoirs by carcinogens (hydrocarbons) were published only in the 1950s. At that time, the investigations of G.M. Cortalum and P.P. Dikun (1956), G.P. Yakovleva (1958), and other authors were published in the Soviet Union.

In spite of the obvious importance of the problem, and of the experience gained by investigators in different countries in investigating it, there are still a number of aspects that have not been studied at all, or else not sufficiently investigated.

In particular, there has not been sufficient investigation of carcinogenic hydrocarbon pollution of fresh water reservoirs, of factors affecting its level, as well as of the fate of carcinogenic PAH in water.

For this reason, we pursued investigations to develop precisely these issues.

USSR

UDC 615.277.4.07

SHABAD, L. M.

Metody Opreddeniya i Izucheniya Blastomogennosti  
Khimicheskikh Veshchestv (Methods of Investigating Blastomo-  
genic Properties of Chemical Substances), Moscow, "Meditsina,"  
1970, 240 pp

Translation:

FOREWORD: Methods play a highly important role in each branch of science and practical application. And this also applies to experimental oncology, which has now become an independent branch of medical science. Moreover, it is precisely in this branch that the development of new methods, and the exact description of the methods already existing, leading to their consolidation and preservation, are of particular importance.

Methods of experimental oncology make it possible to investigate many of the most important problems concerning the etiology and pathogenesis of tumors, and elucidate many of the aspects of the nature and origin of cancer. As a result of the

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USSR

SHABAD, L. M., Metody Opredeleniya i Izucheniya Blastomogennosti Khimicheskikh Veshchestv, Moscow, "Meditsina," 1970, 240 pp

ever broadening experimental investigations of tumor etiology and pathogenesis, these methods are attracting the attention of specialists in related branches of science -- biologists, cytologists, biochemists, geneticists, and even chemists and physicists. At the same time the methods of experimental oncology may be utilized for purely practical purposes, for in many cases they make it possible to evaluate the effects of some action or other and to detect the sources of the carcinogenic substances which pollute the human environment. Experimental oncology methods may in many cases be utilized for the prophylaxis of cancer, thereby attracting the attention of toxicologists and hygienists to these methods. Finally, these methods, and the creation of experimental models of different neoplasms in particular, are of invaluable service, permitting the development of new means of identification and especially therapy of human tumors. All of modern medical therapy has grown on a base of experimental oncological investigations. Therefore,

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SHABAD, L. M., Metody Opredeleeniya i Izucheniya Blastomogennosti Khimicheskikh Veshchestv, Moscow, "Meditsina," 1970, 240 pp

experimental methods of determining the blastomogenic properties of chemical substances should be added to the arsenal of a wider circle of investigators than has been the practice to this time.

A vast number of individual articles in which means and methods of experimental investigations are reflected to some degree or other have been published in the scientific oncological literature. Space is allotted to these problems in practically all of the original investigations concerning carcinogenesis. At present, there is not an organ or tissue in which some type of tumor cannot be induced in one way or another. Although, far from all of these neoplasms are similar to analogous human tumors, many of them can be rightfully regarded as experimental human blasts. To this date, however, the number of large review articles and special books dedicated to methods and experimental models in oncology is relatively small. Only a chapter written by us in a book edited by N. V. Lazarev and published in 1954, and a book edited by A. D. Timofeyevskiy and issued

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SHABAD, L. M., Metody Opredeleeniya i Izucheniya Blastomogennosti Khimicheskikh Veshchestv, Moscow, "Meditsina," 1970, 240 pp

in 1960 on this subject are available in Soviet literature. Meanwhile a large amount of new material has been accumulated in the years that have passed. The extent to which the experimental methods of cancer study attract general attention is evident from the interest shown in the collection of Works "Methods of Cancer Research," edited by Harris Busch and published in the United States in 1967-1968. However, strictly speaking, this publication represents a collection of separate monographs dealing with different problems and occasionally repeating each other; but it is not a guidebook for action. Its size, awkward arrangement, and lack of a single direction with respect to practical instructions make its utilization as a guidebook for different specialty research workers interested in carcinogenic problems difficult. In any case, neither the books by the Soviet authors mentioned above and long since sold out nor the guidebook by the American authors is currently available to the wide circle of USSR scientific and practical

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USSR

SHABAD, L. M., Metody Opredeleeniya i Izucheniya Blastomogennosti Khimicheskikh Veshchestv, Moscow, "Meditsina," 1970, 240 pp

workers interested in experimental oncology methods.

Such a situation makes it possible to offer this book to the reader. Its object is not only to point out the wide possibilities inherent in experimental oncology, but also the concrete and basic methods of the work to be done. The most important of these are dealt with in a somewhat more detailed manner; most of the others, however, are presented in a condensed form, at times dryly without discussions and far-reaching conclusions. The somewhat unbalanced consequence of this book's arrangement is complicated also by the fact that the author naturally pays greater attention to those problems which are of greatest interest to him, and those methods which are widely utilized in the laboratories of our country. It is not the author's purpose to provide an exhaustive review of literature; he bases his work mainly on his own 45 years of experience and the investigations of his comrades in work and associates in this area, with consideration for reports published by other

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USSR

SHABAD, L. M., Metody Opreddeniya i Izucheniya Blastomogennosti Khimicheskikh Veshchestv, Moscow, "Meditsina," 1970, 240 pp

research workers. Of course, not all of the methods which can be utilized for the determination and study of blastomogenic chemical substances are presented in this book. To accomplish such a work a creative approach and on occasions the application of other methods being utilized by research workers in other branches of science are necessary.

The author expresses his sincere gratitude to all persons who by deed and advice assisted in the creation of this book.

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USSR

SHABAD, L. N., Metody Opredeleeniya i Izucheniya Blastomogennosti  
Khimicheskikh Veshchestv, Moscow, "Meditsina," 1970, 240 pp

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1/2 028

TITLE--SOME OBSERVATIONS OVER ORGANIC CULTURES SUBJECTED TO TRANSPLACENTAL  
EFFECT OF CARCINOGENIC AGENTS -U-  
AUTHOR--SHABAD, L.M.

UNCLASSIFIED

PROCESSING DATE--16OCT70

COUNTRY OF INFO--USSR

SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,  
VOL 14, NR 2, PP 28-32  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EMBRYOLOGY, TISSUE CULTURE, LUNG, KIDNEY, ETHYL CARBAMMATE,  
CARCINOGEN, ORGANIC NITRO COMPOUND, AMINE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1988/0056

STEP NO--UR/0396/70/014/002/0028/0032

CIRC ACCESSION NO--AP0105155

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 028

CIRC ACCESSION NO--AP0105155

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR AND HIS ASSOCIATES STUDIED THE TRANSPLACENTAL ACTION OF A NUMBER OF CARCINOGENS ON ORGANIC CULTURES OF THE LUNGS AND KIDNEYS OF AN EMBRYO. ADENOMAS DEVELOPED IN THE ORGANIC CULTURES OF THE LUNGS AS A RESULT OF URETHANE ADMINISTRATION TO PREGNANT MICE; ANALOGOUS EXPERIMENTS WITH NITROSAMINES LED TO DEVELOPMENT OF ADENOMATOSIS. ADENOMATOUS PROLIFERATION OF THE EPITHELIUM AND PRESARCOMATOUS PROLIFERATES WERE ALSO PRODUCED IN SIMILAR EXPERIMENTS ON RATS. UNEVEN HYPERPLASIA AND FOCAL EPITHELIAL PROLIFERATES WERE REVEALED IN THE ORGANIC CULTURES OF THE KIDNEYS OF EMBRYOS FROM PREGNANT MICE AND HAMSTERS, TO WHICH 9,10,DIMETHYL,1,2, BENZANTHRACENE OR 2 CARCINOGENIC CYCLIC AMINES WERE ADMINISTERED. ORGANIC CULTURES GREW BETTER UNDER THE EFFECT OF BLASTOMUTAGENIC AGENTS THAN CONTROL. THE AUTHOR CONSIDERS THAT THE MORPHOLOGICAL CHANGES OBSERVED CAN BE REGARDED AS PRECARCINOMATOUS. A METHOD OF ORGANIC CULTURES CAN BE USED FOR FURTHER STUDY OF PRECARCINOMA, FOR DETERMINATION OF BLASTOMUTAGENIC PROPERTIES OF CHEMICAL AGENTS OF VARIOUS CLASSES, AND FOR THOROUGH EXAMINATION OF THEIR ACTION MECHANISM. FACILITY: OTDEL PO IZUCHENIYU KANTSEROGENNYKH AGENTOV INSTITUTA EKSPERIMENTAL'NOY I KLINICHESKOY ONKOLOGII AMN SSSR, MOSKVA.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 031

CIRC ACCESSION NO--AP0106399  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IN STABILE LINES OF RETICULAR CELLS (APE'S TONSILS AND THE BLOOD OF MAN WITH MONOCYTIC LEUKEMIA) HISTOCHEMICAL INVESTIGATIONS DISCLOSED FIVE FRACTIONS OF THE RIBONUCLEOPROTEID NUCLEOLAR STRUCTURES, ANALOGOUS TO THOSE DESCRIBED EARLIER BY SHABADASH ET AL. IN NERVE CELLS. WHEN STAINED WITH METHYL BLUE THE ISOELECTRIC POINTS OF THE FRACTION I CORRESPOND TO PH-2.5, II, TO PH 2.7-3.2; III AND IV, TO 3.5-3.8; V, TO PH 4.0-4.5. CHRYSOMALINE (THE INHIBITOR OF THE DNA DEPENDENT RNA SYNTHESIS) OR ETHIONINE (THE INHIBITOR OF THE PROTEIN SYNTHESIS) ARE CAUSATIVE IN MAKING THE FIRST THREE FRACTIONS DISAPPEAR. ETHIONINE PRODUCES THE GREATEST IMPACT ON THE IV FRACTION, THIS POINTING TO A HIGH PROPORTION OF PROTEINS CONTAINED IN IT. RELATIVELY RESISTANT IS THE V FRACTION, THE COMPLEX OF RNA WITH DNA OF THE HETEROCHROMATIN-TYPE, THIS CORRELATING WITH RECENT BIOCHEMICAL INVESTIGATIONS OF THE THYMUS CELL NUCLEI. THE DESCRIBED NUCLEOLAR COMPONENTS ARE, EVIDENTLY, TYPICAL FOR DIVERSE CELLS AND CAN BE ELIMINATED EXPERIMENTALLY THROUGH AN ORIENTED ACTION.

UNCLASSIFIED

USSR

ZUBKOVA, O. B., GRIBOV, L. A., ~~SHABADASH, A. N.~~

"The Use of Calculations of the Intensity of Absorption Bands in Infrared Spectra for the Study of Rotational Isomerism"

Minsk, Zhurnal Prikladnoy Spektroskopii, Feb 72, pp 306-312

ABSTRACT: The article concerns an analysis of the results of theoretical and experimental calculations of the intensity of infrared absorption bands of compounds of ethylene glycol from monomers to trimers in trans and gauche conformations. The calculations were made within the framework of the valence-optical theory on the intensity of infrared absorption bands, and experimental values were obtained on the basis of the recorded spectra of liquid samples of these compounds. It was shown that the theoretical calculations of the intensity make it possible to distinguish clear indications of different isomers.

On the basis of an analysis of the theoretical and experimental calculations a conclusion was drawn concerning the existence of chiefly gauche isomers in vapors of the compounds studied and a mixture of trans and gauche isomers in liquids.

The article includes one table and two figures. There are 10 references.

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UDC 669.71

USSR

KARAKOZOV, E. S., and SHABALIN, I. N., Moscow

"On the Kinetics of Nickel Oxidation"

Moscow, Fizika i Khimiya Obrabotki Materialov, No. 5, Sep-Oct 71,  
pp 121-124

Abstract: The kinetic principles of high- and low-temperature oxidation of nickel in an oxygen atmosphere are discussed. The oxidation rate of Ni, characterized by the magnitude of its parabolic constant of the oxidation rate  $k_n$ , is at elevated temperatures mainly affected by the contact of admixtures of manganese and iron which depends on their diffusion mobility in the oxide layer. Based on previous experimental data and investigations of the authors, a correlation function was derived (correlation coefficient 0.97) for temperatures of 1,000 °C and the oxygen pressure of 150 tor, binding  $k_n$  with the contents of Mn and Fe in the  $10^{-4}$  - 1.0 % by wt. concentration interval. The dependence

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USSR

KARAKOZOV, E. S., and SHABALIN, Fizika i Khimiya Obrabotki Materialov, No 5,  
Sep-Oct 71, pp 121-124

of  $k_p$  on Mn and Fe contents and the kinetic oxidation process of Ni by 150 tor oxygen pressure and temperatures between 300 and 550 °C, and proceeding in four conventional stages are shown. From temperature dependences of these stages, the temperature transition interval from the development of thin oxide films to the development of diffusion layers ( temperature interval 420-600 °C ) can be determined. Five illustr., 11 biblio. refs.

2/2

- 44 -

UDC 621.791.793

USSR

SUSHCHUK-SLYUSARENKO, I. I., Candidate of Technical Sciences, SHABALIN, N. N.,  
and ANDRIANOV, G. G., Engineers, and LYCHKO, I. I., Candidate of Technical  
Sciences, Institute of Electric Welding imeni Ye. O. Paton, Academy of  
Sciences Ukrainian SSR

"Some Procedures for Increasing Electroslag Welding Productivity"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 74, pp 46-48

Abstract: To decrease thermal input (lowering superheating of drops and the molten metal bath) for electroslag welding a new method was proposed which involves, with continuous electrode feed, switching off the power to the consumable electrode periodically and using the accumulated heat in the bath to melt the additional material supplied during this period without any current. This new method yields the possibility of joining two plates without the danger of burn-through, and thinner plates can be used (40-50 mm minimum) as compared to conventional electroslag welding (100-150 mm). Also, the welding rate can be increased by 50% using the new method. Other merits of this new method are increased productivity, improved weld joint quality, and reduced overheating of the heat-affected zone. Three figures, five bibliographic references.

1/1

1/2 007  
TITLE--OPERATIONAL CALCULATIONS BY MEANS OF THE THEORY OF PROBABILITIES  
-U-  
AUTHOR--(05)-MARTYNOV, I.M., SOTNIKOV, YE.A., TULUPOV, L.P., KUTYYEV, G.M.,  
SHABALIN, N.N.  
COUNTRY OF INFO--USSR

S  
SOURCE--(EKSPLUATATIONNYYE RASCHETY S PRIMENENIYEM TEORII VEROYATNOSTEY)  
MOSCOW, TRANSPORT, 1970, 238 PP  
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATHEMATICAL SCIENCES  
TOPIC TAGS--RAILWAY NETWORK, RAILWAY TRAFFIC, PROBABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3003/1699

CIRC ACCESSION NO--AM0130569  
UNCLASSIFIED

STEP NO--UR/0000/70/000/000/0001/0238



USSR

UDC: 621.396.69-762

SHABALIN, V. G., BATYRSHINA, R. F.

"Sealing Strip Junctions With Polymerizing Compositions"

V sb. Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry  
--collection of works), vyp. 1, Moscow, 1971, pp 46-48 (from RZh-Radiotekh-  
nika, No 5, May 71, Abstract No 5V272)

Translation: A cement composition is developed as well as a method of seal-  
ing printed-circuit strip junctions ensuring reliable operation under the  
effect of destabilizing factors, as well as stability of characteristics over  
a wide temperature range. Resumé.

1/1

- 91 -

USSR

UDC 539.385

SHABALIN, V. I., ABABKOV, G. V., YEVSEYEV, V. V., and TOMANOVA, R. A.

"Investigation of the Laws Governing the Fatigue Failure of Aviation Alloys"

Sb. Nauch. Tr. Kiyev. In-t Inzh. Crazhd. Aviatcii (Collection of Works of the Kiev Institute of Civil Aviation Engineers), No 4, 1971, pp 57-61 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V1360 by L. M. Shkol'nik)

Translation: A study was made of the influence of the width and length of the working part of a sample upon the rate of growth of fatigue cracks, as well as of scattering of the test results with respect to the moment of appearance of the first macroscopic cracks and the moment of total failure of the sample. The tests were conducted on flat samples of aluminum alloys D16T and V95 with a central aperture, for repeated cyclical elongation with a frequency of 435 cycles per minute. It was established that the length of the samples does not affect their longevity and rate of crack growth. With a width increase of the samples and a length increase of the crack, the growth rate of the cracks increases. Increasing the width of the samples also brings about a decrease of the fatigue-failure stage and of the relative crack length at the moment of failure. With an increase of sample width, the coefficient of stress concentration at the end of a fatigue crack increases. The greatest scattering is

1/2

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Acc. Nr:

AP0046652

Abstracting Service:

INTERNAT. AEROSPACE ABST 5-70 21 R 3663

Ref. Code:

A70-25290 # Study of the rate of propagation of fatigue cracks (Issledovanie skorosti rasprostraneniia treshchin ustalosti). V. I. Shabalin and G. V. Ababkov, *Problemy Prochnosti*, vol. 2, Feb. 1970, p. 11-17. 10 refs. In Russian.

Results of a study of the rate of crack growth and of the relation between this stage of fatigue and the overall lifetime of specimens made of D16AT sheet alloy with holes as stress concentrators. It is shown that the rate of propagation of a fatigue crack must be related not to the length of the crack, but to the duration of the various phases of its development. It is necessary to establish a safe period of fatigue crack growth as a function of the material, the stress level, and the test conditions.

A.B.K.

REEL/FRA  
19781965

1/2 011  
TITLE--EXPERIMENTAL VERIFICATION OF RENORMALIZABLE THEORIES OF WEAK  
INTERACTION IN EP SCATTERING PROCESSES -U-  
AUTHOR--(02)-LOBOV, G.A., SHABALIN, YE.P. S

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(5), 1125-7

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--WEAK NUCLEAR INTERACTION, NUCLEAR SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0590

STEP NO--UR/0367/70/011/005/1125/1127

CIRC ACCESSION NO--AP0137675

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 011  
CIRC ACCESSION NO--AP0137675  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRADITIONAL THEORETICAL SCHEMES  
CONCERNING WEAK INTERACTIONS ORIGINATING IN THE STUDY OF HIGHER ORDER  
PROCESSES OR IN TRANSITIONS TO HIGH ENERGY LIMITS INVOLVED IN SCATTERING  
PROCESSES HAVE PRESENTED SOME DIFFICULTIES. RENORMALIZABLE THEORIES  
FOR THE EP SCATTERING PROCESS ARE DISCUSSED. FACILITY: INST.  
TEOR. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 025  
TITLE--EFFECT OF THE MOLECULAR WEIGHT OF POLY(METHYL METHACRYLATE) ON  
VISCOS AND DEFORMATION STRENGTH PROPERTIES OF ITS SOLUTIONS IN METHYL  
AUTHOR--(05)-RYABOV, A.V., YEMELIANOV, D.N., CHEKNOOYEVA, I.V.,  
ROSLYAKOVA, V.A., SHABALINA, N.A.  
COUNTRY OF INFO--USSR  
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 192-5  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--MOLECULAR WEIGHT, POLYMETHYLMETHACRYLATE, METHYL METHACRYLATE,  
SHEAR STRESS, FLUID VISCOSITY, THIXOTROPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1995/1202

CIRC ACCESSION NO--AP0116667

UNCLASSIFIED

STEP NO--UR/0460/70/012/003/0192/0195

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 025

CIRC ACCESSION NO--AP0116667

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE SHEAR STRESS (P) VS. VISCOSITY

(ETA) RELATIONS OF 15PERCENT POLY(ME METHACRYLATE) (I) IN ME

METHACRYLATE DEPEND ON THE MOL. WT. (M) OF I. IN 0-80 DYNE-CM PRIME2 P

RANGE ETA IS CONST. WHEN M IS 5.6 TIMES 10 PRIME4 OR 1.2 TIMES 10

PRIME5. HOWEVER, WHEN M EQUALS 1.3 TIMES 10 PRIME6 THESE SOLNS. ARE

THIXOTROPIC: ETA RAPIDLY DECREASES WHEN P GREATER THAN 8 DYNES-CM

PRIME2. FACILITY: NAUCH.-ISSLED. INST. KHIM., GOR.K. GOS. UNIV.

IM. LOBACHEVSKOGO, GORKI, USSR.

UNCLASSIFIED

SHABALINA, N. B.

WORKING ABILITY AND THE ORGANIZATION OF HANDICAPPED LABOR.

31 Mar 71

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PROCYBERNETICS

130. USSR

DOMONTOVICH, Ye. M., ZOGAL, Ye. M., ANTONOVICH, N. B., and SHABALINA, N. B., Central Scientific Research Institute for Working Ability and the Organization of Handicapped Labor.

"A Psycho-Physiological Investigation of the Dynamics of Capacity for Mental Work" Moscow, Voprosy Psichologii, Vol. 6, Nov-Dec 70, pp 86-93

Abstract: Observations of subjects performing mental work indicate four definable stages of performance: 1) Learning the task; 2) Developing skills; 3) Steady performance; 4) Declining performance with fatigue. A definite correlation was found between the flow of blood to the brain and the stage of performance: blood supply tends to increase as performance improves during the second stage, then level off during the third stage and decline as fatigue sets in. In normal subjects the rheoencephalographic coefficient at both the front and rear portions of the brain increases throughout the first two stages of the work during the stable phase of work and values for the rear portions of the brain fall off, while those for the frontal portions remain steady at a high level. In patients at the first stage of hyperkinesia the increase terminates halfway through the period of improvement and remains stable thereafter; in patients with second stage hyperkinesia approximately the same early improvement is noticed, but the blood supply at the rear of the brain

1/2

50: Foreign Press Digest  
31 Mar 71

USSR

DOMONTOVICH, Ye. M., et al., Voprosy Psichologii, Vol. 6, Nov-Dec 70, pp 86-93

tends to fall off halfway through the initial stage of work and remain at a low level thereafter. The percentage increase in normal subjects is about ten percent, in hypertonic patients nine percent or less.

The authors draw the following conclusions:

1. Simultaneous investigation of psychophysiological and physiological factors is a valuable tool in distinguishing different stages of intellectual activities.
2. The entire brain participates in intellectual work, but the "epicenter" of effort shifts over time. Initially it is associated with the visual centers (the task performed in these experiments required the subjects to make frequent use of a correspondence table between letters and numbers -- as the task progressed this correspondence tended to be memorized); later, as the task is "interiorized," this epicenter shifts to the frontal portions of the brain.

3. These tendencies are more clearly observed in healthy persons and are less evident in hypertonic patients.

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1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--INVESTIGATION OF ACTIVE AND REPRESSED CHROMATIN IN BIRD LIVER AND  
ERYTHROCYTE NUCLEI -U-  
AUTHOR--(03)-SHABALINE, A.T., MOROZOVA, T.M., SALGANIK, R.I.  
COUNTRY OF INFO--USSR  
SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 3, PP 411-413  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BIRD, LIVER, CHROMATIN, ERYTHROCYTE, RNA, CATALASE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1998/0165 STEP NO--UR/0463/70/004/003/0411/0413  
CIRC ACCESSION NO--AP0120865

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PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120865

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACTIVE REPRESSED CHROMATIN RATIO IN THE NUCLEI OF ERYTHROCYTES AND LIVER CELLS OF BIRDS (GALLUS DOMESTICUS) WAS STUDIED. THE AVERAGE CHROMATIN CONTENT WAS ESTABLISHED TO BE 0.1-0.3PERCENT IN ERYTHROCYTES AND 26.3PERCENT IN LIVER. THE HIGH RNA CONTENT AND THE CONSIDERABLE INTENSITY OF ITS SYNTHESIS IN LIVER CHROMATIN, AS COMPARED TO ERYTHROCYTE CHROMATIN, CONFIRM THE CONCEPT ABOUT CONSIDERABLE REPRESSEDNESS OF ERYTHROCYTE GENOME. THE INTENSITY OF RNA SYNTHESIS AND ITS HIGH CONTENT IN THE REPRESSED CHROMATIN OF ERYTHROCYTES IS MUCH LOWER THAN IN THAT OF LIVER CELLS; THE DIFFERENCES IN THE ACTIVE CHROMATIN ARE LESS DRASTIC. IT WAS SHOWN THAT IN LIVER CELL NUCLEI OF BIRDS OF A STRAIN WITH LOW ERYTHROCYTE CATALASA ACTIVITY, THE ACTIV CHROMATIN CONTENT IS LOWER THAN IN LIVER CELL NUCLEI OF BIRDS WITH HIGH ERYTHROCYTE CATALASA ACTIVITY. FACILITY: INSTITUTE OF CYTOLOGY AND GENETICS, SIBERIAN BRANCH OF ACADEMY OF SCIENCES, USSR, NOVOSIBIRSK.

UNCLASSIFIED

UDC 575.24

USSR

USMANOV, P. D., STARTSEV, G. A., SHABALOV, V. V., and NASKROV, Yu. S., Institute of the Physiology and Biophysics of Plants, Academy of Science Tadzhik SSR, Dushanbe

"Mutagenic Effects of Laser Irradiation of Seeds of *Arabidopsis thaliana* (L.) Heynh"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 2, 1970, pp 455-457

Abstract: Since absorption of laser rays produces a release of heat and a high-intensity electrical field it was decided to investigate the possible mutations that may develop in plants after such irradiation. Air-dried seeds of *Arabidopsis thaliana* (L.) Heynh (Einkheim strain) were irradiated with modulated ( $t = 6 \times 10^{-9}$  sec) and freely generated ( $t = 5 \times 10^{-4}$  sec) ruby laser rays and planted in appropriate media. Both the percentage of germinating seeds and the size and viability of the sprouts were reduced. As a result of mutations in pigmentation, the plants acquired a pale green, yellow, or whitish color. Evidence suggests that these mutations were caused not only by the heat released, but also (and primarily) by nonlinear optical processes. Since 100 of the 760 irradiated plant families developed viable mutants, laser rays may be regarded as a new physical agent that can be used to produce mutations in *Arabidopsis thaliana*.

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USSR

AKHUND-ZADE, M. Yu., SHABANBEKOV, Z. M., and MUSAYEV, Kh. I.

"Determining the Stresses in Characteristic Cross Sections of Non-Circular Reinforced Concrete Cylindrical Shells"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR--Seriya fiziko-tekhnicheskikh i matematicheskikh nauk, 1970, No. 3, pp 138-143

Abstract: This article concerns itself with thin-walled structures widely used in shipbuilding, aviation, and rocketry, in addition to other forms of modern building techniques. Its function is to cast additional light on the physics underlying the phenomena occurring in the loading of reinforced concrete shell coverings, and just touch on some problems in architecture, economics and production. As is usual in the design of such shells, it is assumed that Hooke's law governs the uniform material of the shell all along the height of the cross section. The authors consider the

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USSR

AKHUND-ZADE, M. YU., et al, Izvestiya Akademii Nauk Azerbaydzhan-  
skoy SSR--Seriya fizikotekhnicheskikh i matematicheskikh nauk,  
1970, No 3, pp 138-143

computation of the shells' sturdiness by starting from one form of the equation of V. V. Novozhilov for the equilibrium of nonslanting cylindrical shells, by which they determine the bending moments, normal forces, and displacements. To show how the formulas they derive are used, they take a practical example.

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USSR

UDC 547.313:66.062.539.094.404

MOVSUMZADE, M. M., SHABANOV, A. I., MOVSUMZADE, S. M., and GURBANOV, P. A.,  
Azerbaydzhan Petroleum and Chemical Institute imeni M. Azizbekov

"Conjugated Bromination of Oxirane-Olefin Mixtures. I. Synthesis of Cyclic  
2,2'-Dibromethers"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 6, Jun 71, pp 1105-1108

Abstract: By the action of  $\text{Br}_2$  on a mixture of cyclohexene with cyclohexene oxide in  $\text{CCl}_4$ , 2,2'-dibromocyclohexyl ether (I; b.  $155-60/2$  mm) was prepared with a good yield. With increasing molar ratios of cyclohexene oxide to cyclohexene, the maximum yield of I (71.2%) was reached at the ratio of 8:1. Changing of the reaction temperature in the minus 10 - plus  $50^\circ$  range or carrying out the reaction in a different solvent ( $\text{HCCl}_3$ , ether, or hexane) did not alter the yield significantly. Similarly, conjugated bromination of cyclopentene oxide and cyclopentene, cyclohexene oxide and cyclopentene or cyclopentene oxide and cyclohexene, cyclohexene oxide and 1-methylcyclopentene, and cyclohexene oxide and 1-methylcyclohexene led to the formation of 2,2'-dibromodicyclopentyl ether (60.8%, b.  $116-170/2$  mm), 2-bromocyclopentyl-2-bromocyclohexyl ether (82.8%, b.  $129-300/2$  mm), 2-bromo-1-methylcyclopentyl-2-bromocyclohexyl ether (68.4%, b.  $132-40/\text{mm}$ ), and 2,2'-dibromo-1-methyldicyclohexyl ether (71.7%, b.  $150-30/2\text{mm}$ ), respectively. Dibromides of the olefins used formed as byproducts of the conjugated bromination.

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USSR

UDC 547.313.:66.062.539.094.404

SHABANOV, A. L., MOVSUMZADE, M. M., MOVSUMZADE, S. M., and GURBANOV, F. A.,  
Azerbaydzhan Petroleum and Chemical Institute imeni M. Azizbekov

"Conjugated Bromination of Oxirane-Olefin Mixtures. I. Synthesis of 2,2'-  
Dibromoalkyl Ethers"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 6, Jun 71, pp 1109-1110

Abstract: By the conjugated bromination in  $\text{CCl}_4$  at  $0-5^\circ$  of ethylene oxide and ethylene that was passed through the reaction mixture, 2,2'-dibromodiethyl ether (b.  $56-59^\circ/2$  mm) was prepared with a yield of 66.4%. By applying the same reaction of conjugated bromination, 2,2'-dibromoethers were prepared from trimethylethylene and cyclohexene oxide, trimethylethylene and cyclopentene oxide, 1-methylcyclohexene and cyclopentene oxide, and styrene and cyclohexene oxide with a yield of 41.4 (b.  $126^\circ/2$  mm), 85.4 (b.  $132-40^\circ/2$  mm), 72.6 (b.  $101-2^\circ/2$  mm), and 74.0% (b.  $181.3^\circ/2$  mm), respectively. Addition to the double bond proceeded according to the Krasuskiy rule. On conjugated chlorination of ethylene oxide together with ethylene in  $\text{CCl}_4$  at minus  $10-0^\circ$ , 2,2'-dichlorodiethyl ether was obtained with a yield of 90% vs. 45% when chlorination of the same substances was carried out without a solvent, as indicated in French Pat. 713140, Chem. Abs. 1, 3476 (1935)

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Acc. Nr:

AP0052062

Ref. Code: UR0396

PRIMARY SOURCE: Patologicheskaya Fiziologiya i  
Eksperimental'naya Terapiya, 1970, Vol 14,  
Nr 1, pp 43-45

REPRODUCTION OF EXPERIMENTAL ENDARTERITIS BY HORMONES

A. N. Shabanov, Ts. Ya. Gudynskaya, M. A. Potchayev, D. V. Komov

Hydrocortisone and testosterone were injected to male rabbits for 3 months, daily. Vessels of the limbs, abdominal and thoracic aorta and renal artery were examined. Un-  
typical changes, varying from mucoid swelling to plasmatic impregnation were revealed  
in all the groups of rabbits. Analogous changes were seen in histological and histoche-  
mical examination of the vessels at the early stages of endarteritis obliterans.

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19820600



UNCLASSIFIED  
TITLE--THE EMPLOYMENT OF CYCLOPROPANE CONTAINING MIXTURES FOR ANESTHESIA  
-U-  
AUTHOR--SHABANOV, A.N., YELSHANSKIY, V.I., YERIVANTSEV, N.A., TRETYAKOVA,  
V.I.  
COUNTRY OF INFO--USSR  
SOURCE--KHIFURGIYA, 1970, NR 1, PP 74-79  
DATE PUBLISHED-----7C  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ANESTHESIA, CYCLOPROPANE, OXYGEN, HYPERTENSION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
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Acc. Nr: **AP 0044855**

Ref. Code: **UR 0531**

PRIMARY SOURCE: **Khirurgiya, 1970, Nr 1, pp 74-79**

**THE EMPLOYMENT OF CYCLOPROPANE-CONTAINING  
MIXTURES FOR ANESTHESIA**

**Shabanov, A. N.; Yelshanskiy, V. I.; Yerivantsev, N. A.;**  
**Tretyakova, V. I.**

The authors carried out 184 anesthetics with cyclopropane-oxygen and nitrous-oxide-cyclopropane-oxygen (in different proportions) mixtures in aged and senile patients during operations on abdominal organs and on the extremities. Before, during and after anesthesia the authors studied the function of the cardiovascular system, the state of respiration and gas exchange, function of the liver and kidneys, and glucocorticoid metabolism. Clinical observations and the results of investigations made it possible to arrive at the following conclusions: 1) there were no absolute contraindications to the use of modern cyclopropane anesthesia in the referred to patients; 2) high arterial hypertension and renal insufficiency are relative contraindications; 3) combined nitrous-oxide-cyclopropane-oxygen anesthesia is the most rational technique.

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**19771710**

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Hydrobiology

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USSR

SHABANOV, A. N.

"Reaction of Fish to Changes in the Velocity of Water"

Moscow, Rybnoye Khozyaystvo, No 6, 1971, pp 44-45

Abstract: To determine the boundary values of the velocity of water movement which produce a negative reaction in fish, tests were carried out in 1969 in the Central-Eastern Atlantic aboard an SRTR (sredniy rybolovnyy trawler-refrizherator; medium size fish refrigerator trawler). At night, 16-20 centimeter sardinella and trachurus were attracted to the side of a freely drifting ship by an underwater electric light. The catching device of the fish pump RB-200 was placed at a depth of three meters from the surface of the water, 2.5 meters from the ship. A measuring net was painted on the bulwark to determine the distance of the fish from the suction nozzle of the pump, and two electric lights were placed at the nozzle. The velocity of the water at the nozzle intake was 4 meters per second.

During tests in the electric light zone both species of fish were mobile, and when approaching within 1.5 to 2.0 meters from the intake nozzle reacted negatively to the sucking flow of water and moved away. Thus, the boundary value of the suction velocity of water with which these fish show a negative

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SHABANOV, A. N., Rybnoye Khozyaystvo, No 6, 1971, pp 44-45

reaction is 0.002 to 0.004 meters per second. Studies of possible management of the behavior of fish by means of various physical irritants in a zone of action of fishing equipment are being carried out. The data obtained on the maximum value of changes in the velocity of water at which a negative reaction may occur in fish may explain their behavior in the trawl net and evaluate the hydrodynamic properties of the equipment from the point of view of their interrelationship with the catch.

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